Uncrewed Aircraft Systems ITAG Endorsement Survey

1. Respondent Information

April 19, 2022

Please complete the survey online by May 3, 2022.

The purpose of this survey is to collect responses from Ohio public institutions of higher education regarding a proposed alignment and awarding of credit hours for the Industry Recognized Credential Transfer Assurance Guide (ITAG) for Uncrewed Aircraft Systems (UAS). We are asking respondents to read the proposed ITAG template. The template lists in the left-hand column the learning outcomes from the Career-Technical Assurance Number (CTAN) for Uncrewed Aircraft Systems (UAS) which was approved in March 2022. In the right-hand column are the competencies required to acquire the Unmanned Safety Institute (USI) level 1 certificate.

If approved, the proposed ITAG would allow a student who passes the sUAS Safety Level 1 certification exam to transfer 3 credit hours to an Ohio public institution of higher learning towards a course covering the content of Uncrewed Aircraft Systems, regardless of where and how the student obtained the education to obtain the certification.

We ask that **one representative** complete this survey on behalf of your institution as soon as possible, but **no later than May 3, 2022**. Please share this survey with the person most familiar with the content and subject matter. Following statewide endorsement, a formal announcement will be sent out.

Brian Strzempkowski, The Ohio State University, is the lead faculty expert on the ITAG panel. Specific questions relevant to the content components of the alignment can be addressed to strzempkowski.1@osu.edu with a carbon copy to Nikki Wearly (nwearly@highered.ohio.gov).

Survey responses left in the form of comments will also be reviewed by the members of the ITAG panel.

We thank you in advance for your valuable input.

* 1. Demographic Information about the person completing this survey

Name	
Institution	
Department	
Title	
E-mail	
Phone	

* 2. Please indicate the type of institution that you represent

- [ ] University
- [ ] Regional Campus
- [ ] Community College

Uncrewed Aircraft Systems ITAG Endorsement Survey

2. Uncrewed Aircraft System Curriculum

* 3. Does your institution offer one or more courses in Uncrewed Aircraft Systems, or are there plans to create one?

- ◯ Yes
- ◯ No

Uncrewed Aircraft Systems ITAG Endorsement Survey

3. Alignment

Please read through the template below.

XXXX ITAG: Documentation of Credential and Alignment for Uncrewed Aircraft Systems

Credential Name:	Uncrewed Aircraft Systems
Credential Type:	X Certification ☐ License
Issuer of Credential:	Unmanned Safety Institute (USI)
Frequency of Updates:	
Exam(s) Required:	sUAS Safety Certification Level 1 - https://www.unmannedsafetyinstitute.org/small-uas-safety-certification
Additional Requirements:	
Current CTAG/TAG: (if applicable)	Being developed
Description of content to be evaluated and aligned: The certification exam evaluates 11 major themes derived from lessons-learned in traditional aviation and requirements for Remote Pilots.	
How long after attainment can credit be awarded?	2 years
How can receiving institutions verify credential attainment?	Proof of passing sUAS Safety Certification Level 1 certificate

Course Name: Uncrewed Aircraft Systems or equivalent
Credit Hours: 3 semester hours

Course Description:

Postsecondary Learning Outcomes	Content from Credential
1. Demonstrate a basic understanding of weather theory, hazardous weather situations, wind shear avoidance, and the procurement and use of graphical and textual weather products in order to identify current conditions and short-term forecasts.	Unit 3. The Elements. Examines the environment in which UAS and remote pilots operate.
2. Demonstrate basic knowledge of the Federal Aviation Regulations that relate to Remote Pilot in command privileges, limitations, and flight operations.	Unit 4. FAA Regulations. Explores the limitations and authorities vested in remote pilots by 14 CFR 107. Unit 5. Operations in the National Airspace System. Explains the FAA established rules and policies for operating in the National Airspace System.
3. Demonstrate the ability to interpret aeronautical charts in order to identify airspace classification, airport locations, obstructions, and other hazards that may affect a UAS flight	Unit 5. Operations in the National Airspace System. Explains the FAA established rules and policies for operating in the National Airspace System. Unit 7. Aeronautical Decision Making. Explores the process of assessing risks and examines the decision-making process once the operator has a clear picture of the risk.
4. Identify the need for permission to fly in certain types of airspace and be able to utilize the appropriate systems to obtain those permissions	Unit 4. FAA Regulations. Explores the limitations and authorities vested in remote pilots by 14 CFR 107. Unit 5. Operations in the National Airspace System. Explains the FAA established rules and policies for operating in the National Airspace System.
5. Recognize when a waiver is needed for a flight, and understand the process to seek a waiver from the FAA	Unit 5. Operations in the National Airspace System. Explains the FAA established rules and policies for operating in the National Airspace System. Unit 8. Professional Remote Pilot. Examines the ethical and legal requirements of the Remote Pilot in Command (RPIC). Establishes standards of practice as well as explores careers in unmanned aviation.
6. Demonstrate an understanding of the aerodynamics that allow a UAS to fly, and how the shape and size of a UAS can change aerodynamic elements; identify sensor types and capabilities	Unit 2. Unmanned Aircraft. Examines the sub-components of Unmanned Aircraft (UA) and the factors affecting UAS aerodynamics and performance, and exploratory review of robotic aircraft.

	Unit 9. Datalinks: Electromagnetic Spectrum, signal propagation, influences on UAS communication. Examines the datalinks required to communicate back and forth from the air vehicle to the ground control station and vice versa. Unit 10. UAS Control: Control Station Dynamics, Autonomy vs Direct Control, Simulation. Examines advancements in ground station development and the advantages and disadvantages of this modified and simulated cockpit.
7. Demonstrate a basic knowledge of the performance limitations of UASs, and how to properly plan and conduct a flight within those limitations (weight and balance)	Unit 2. Unmanned Aircraft. Examines the sub-components of Unmanned Aircraft (UA) and the factors affecting UAS aerodynamics and performance, and exploratory review of robotic aircraft. 11. Payloads: Data Acquisition, Sensors, Economic Impacts. Examines the sensors and science behind the acquisition of environmental information from a sUAS flying overhead.

8. Identify when crew resource management (CRM) and single pilot resource management (SRM) is essential to a flight, and describe the elements of effective CRM and SRM, including proper radios phraseology.	Unit 6. The Human Factors of UAS and Crew Resource Management. Defines human limitations as they contribute to errors and violations that can be the causal factors in UAS accidents. Crew Resource Management (CRM) introduces non- technical skills used to combat human errors. Unit 8. Professional Remote Pilot. Examines the ethical and legal requirements of the Remote Pilot in Command (RPIC). Establishes standards of practice as well as explores careers in unmanned aviation.
9. Describe how safe, effective decisions pertain to a UAS flight, and how hazardous attitudes can degrade safety; ADM, PAVE, IM SAFE	Unit 7. Aeronautical Decision Making. Explores the process of assessing risks and examines the decision-making process once the operator has a clear picture of the risk. Unit 8. Professional Remote Pilot. Examines the ethical and legal requirements of the Remote Pilot in Command (RPIC). Establishes standards of practice as well as explores careers in unmanned aviation.

10. Demonstrate an understanding of the UAS industry and how their inclusion across multiple industries can lead to career opportunities	Unit 1. UAS Foundations. Examines the terms of reference, issues facing UAS integration, and developmental and regulatory history. Unit 8. Professional Remote Pilot. Examines the ethical and legal requirements of the Remote Pilot in Command (RPIC). Establishes standards of practice as well as explores careers in unmanned aviation.
11. Describe the ability to effectively pilot a UAS, and the process involved to initiate, conduct and terminate the flight safely	Unit 4. FAA Regulations. Explores the limitations and authorities vested in remote pilots by 14 CFR 107. Unit 5. Operations in the National Airspace System. Explains the FAA established rules and policies for operating in the National Airspace System. Unit 7. Aeronautical Decision Making. Explores the process of assessing risks and examines the decision-making process once the operator has a clear picture of the risk.
12. Describe a basic understanding of preflight inspection, maintenance, and troubleshooting	Unit 8. Professional Remote Pilot. Examines the ethical and legal requirements of the Remote Pilot in Command (RPIC). Establishes standards of practice as well as explores careers in unmanned aviation. Unit 7. Aeronautical Decision Making. Explores the process of assessing risks and examines the decision-making process once the operator has a clear picture of the risk.

* 4. Do you agree that the content of the Unmanned Safety Institute (USI) sUAS Safety Certificate Level 1 listed in the right-hand column in the template aligns with the learning outcomes listed in the left-hand column that were taken from the CTAN course, which was approved in March 2022?

- ◯ Yes
- ◯ No

If you feel there was a major omission in the content to support a learning outcome, please indicate.

* 5. Do you support the awarding of 3 semester credit hours toward the Uncrewed Aircraft Systems course for students who provide proof of passing the sUAS Safety Certification Level 1 exam, regardless of where the student learned the content to pass the exam?

- ◯ Yes
- ◯ No

If no, please explain.

* 6. Do you support the creation of an ITAG for Uncrewed Aircraft Systems based upon the Uncrewed Aircraft Systems CTAG?

- ◯ Yes
- ◯ No

If no, please explain.

Uncrewed Aircraft Systems ITAG Endorsement Survey

4. Unmanned Aircraft Systems Course

* 7. Does your institution offer a course that aligns to the approved learning outcomes for the Unmanned Aircraft Systems CTAG course, as listed in the left column of the alignment template on the previous page?

- ◯ Yes
- ◯ No

Uncrewed Aircraft Systems ITAG Endorsement Survey

5. Uncrewed Aircraft Systems Course

* 8. What is the course name and number of your Uncrewed Aircraft Systems course? If the course is under development, please indicate this in your response.

* 9. How many credit hours are awarded for this course?

* 10. Do you currently award credit for this course to students who hold the sUAS Safety Certification Level 1?

- ◯ Yes
- ◯ No

If yes, please describe the Prior Learning Assessment (PLA) process at your school for applying the sUAS Safety Certification Level 1 to meet the credit hours for your Uncrewed Aircraft Systems course.

Uncrewed Aircraft Systems ITAG Endorsement Survey

6. Additional Comments

11. Are there additional comments that you would like to make about the proposed ITAG for Uncrewed Aircraft Systems?

Uncrewed Aircraft Systems ITAG Endorsement Survey

7. Thank You!

Thank you for completing this survey.

If you have any questions regarding this survey, please contact Nikki Wearly at nwearly@highered.ohio.gov.